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Kohei Yamanaka

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EXAMINER

GARCIA, ERNESTO

ART UNIT

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3679

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/684,684	Applicant(s) YAMANAKA ET AL.	
	Examiner ERNESTO GARCIA	Art Unit 3679	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 June 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-11 and 21-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4-11 and 21-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 June 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Drawings

The drawings were received on June 27, 2008. These drawings are accepted; however, the replacement drawings contain discrepancies.

The drawings are objected to because the caulked portion in the axial groove in Figure 11 does not look like the one shown in Figure 14. In particular, note that the opposed faces 2i shown in Figure 11 have a different configuration than that shown in Figure 11 (unreferenced; yet appear angled). Further, the depth of the caulk portion of the surrounding member 6 in Figure 11 is different than that shown in Figure 17. Another distinction is that the top surface of the caulked portion of the surrounding member 6 in the axial groove is different. Accordingly, the caulking in Figures 11 and 14 are not the same. The bottom surface of the caulked portion in the axial groove has a projection in Figure 11 that is different from that shown in Figure 14.

The drawings are objected to because reference characters 81a and 81b in Figures 14, 15A, and 15B are not consistent. Note that reference character 81b in

Figure 14 point to the curved surface while that in Figure 15B points to the flat tip.

Further, the circumferential groove 2d is not completely illustrated in Figure 11. Part of the groove is missing and should be shown according to the attachment provided.

Reference character "C" in Figure 10 should be labeled "XI" to make reference to Figure 11.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended". If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The disclosure is objected to because of the following informalities:

on paragraph [024], the description of Figures 15B is incorrect as there is no caulker in Figure 8.

Claim Objections

Claims 1 and 29 are objected to because of the following informalities:

regarding claims 1 and 29, “the deeper” in claim 1, line 25, and claim 29, line 10, should be deleted since this is redundant. Appropriate correction is required. For purposes of examining the instant invention, the examiner has assumed these corrections have been made.

Double Patenting

Applicant is advised that should claim 4 be found allowable, claim 25 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k). With respect to claim 4, since claim 1 has set forth that the

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caulked portion is at the intersection and claim 4 further limits the caulked portion being wider than the axial groove, the caulked portion apparently would be only at the intersection and part of the circumferential groove adjacent to the intersection as claimed in claim 25. Applicants have argued that claims 4 and 25 are worded completely differently from each other, and definitely differ in scope. In response, it is clear that the claims are worded differently; however, the scope are the same just using different terms. Applicants have not set forth what is the difference in scope between the claims.

Applicant is advised that should claim 1 be found allowable, claim 30 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k). With respect to claim 30, this claim is written in the alternative where either the axial groove or the circumferential groove is deeper, and thus covers the same subject matter as that in claim 1. Obviously, claim 1 is included in claim 30.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

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art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 4, 5-11, 22, 25, and 27-29 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claims 1, 29, and 30, the limitation "exclusively" in claim 1, line 25, claim 29, line 9, and claim 30, line 24, is nowhere supported in the written description requirement. The drawings do not suggest or imply that the caulked protrusion portion is engaged with the axial groove exclusively but rather both the circumferential groove and the axial groove at the intersection. Accordingly, this limitation constitutes new matter.

Regarding claims 4, 5-11, 22, 25, 27, and 28, the claims depend from claim 1 and therefore do not comply with the written description requirement.

Claims 1, 4-11, 22, 25, 27-30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 1, 29, and 30, the recitation "exclusively" in claim 1, line 25, claim 29, line 9, and claim 30, line 24, is misdescriptive since the caulked portion

according to Figures 9-14 does not exclude the circumferential groove at the intersection to render being exclusively at the axial groove.

Regarding claims 27 and 28, the recitation “and one circumferential groove” in lines 2-3 is redundant since claim 1, lines 3-4, have set forth “a circumferential groove” which is one circumferential groove and the same one.

Regarding claim 29, the recitation “the axial groove” in line 2 is redundant since claim 21, lines 3-4 have set forth that the outer periphery is formed with an axial groove.

Regarding claims 4-11 and 25, the claims depend from claim 1 and therefore are indefinite.

Claim Rejections - 35 USC § 103

Claims 1, 4-7, 9, 11, and 21-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chikaraishi, JP-11-248562 (see US6,301,975 for English translation), in view of Dent, 3,652,111.

Regarding claims 1 and 30, Chikaraishi discloses, in Figure 2, a structure comprising a first shaft member **3**, a second shaft member **2**, a surrounded member **2A**, a cylindrical member **10**, and a torque detection coil **20B**. The first shaft member **3** is

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formed out of a first material. The first shaft member **3** has an outer periphery formed with an axial groove **11** and a circumferential groove **12** (see Figure 3). The axial groove **11** and the circumferential groove **12** have a cross-section having opposed faces substantially parallel to each other. The second shaft member **2** is fixed to the first shaft member **3** via a torsion bar **4**. The surrounded member **2A** is formed out of a magnetic material (similar to that of the shaft) and fixed to the second shaft member **2**. The cylindrical member **10** is fitted to the outer periphery of the first shaft member **3**. The cylindrical member **10** has a portion facing the surrounded member **2A**. The cylindrical member **10** is formed out of a second material greater in linear expansion coefficient than the first material (aluminum is greater in linear expansion than iron used to make the shafts). The second material is conductive non-magnetic metallic material. A caulked portion **13** is provided to the cylindrical member **10** partly at an intersection of the axial groove **11** and the circumferential groove **12**. The caulked portion **10** has a continuous and deformed inner surface in press contact with the opposed faces of the axial groove **11** (see Figure 5a) and the circumferential groove **12**.

However, Chikaraishi fails to disclose the axial groove **2e** being greater in depth than the circumferential groove **2d** and the caulked portion **10** having a caulked protrusion portion extending beyond a depth of the circumferential groove and engaged with the axial groove. Dent teaches, in Figure 3, an axial groove **64** being greater in depth than a circumferential groove **36** and a caulked portion at an intersection having a caulked protrusion portion extending beyond a depth of the circumferential groove and

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engaged exclusively with the axial groove (See Dent; col. 4, lines 35-38). Dent does not explicitly explain the reason for making the axial groove greater in depth than that of the circumferential groove; however, it appears that placing the axial groove or the circumferential groove greater in depth than that of the other allows swaging of the material to penetrate deeper into the groove to hold with a greater compression force as compared to the depths being the same. Therefore, as taught by Dent, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the axial groove be greater in depth than the circumferential groove to swage the caulked portion deeper into the axial groove to provide a greater compression force to connect the first shaft member to the cylindrical member.

Regarding claim 4, given the modification a circumferential width of the caulked portion would have been greater than a circumferential width between the opposed faces of the axial groove **11** at the intersection.

Regarding claim 5, given the modification, a first caulked part would have corresponded to the circumferential groove **12** and a second caulked part corresponding to the axial groove **11**. The second caulked part would have been arranged substantially in a middle of the first caulked part.

Regarding claim 6, the axial groove **11** comprises a plurality of groove portions in a circumferential direction.

Regarding claim 7, the groove portions are three in number.

Regarding claim 9, the cylindrical member **60** is apart from the first shaft member **2**. However, Chikaraishi fails to disclose the cylindrical member being apart from the first shaft member by a clearance except at the caulked portion **18**. Applicants are reminded that using the technique of Dent allows for a clearance to be present since one needs to slidably fit the cylindrical member to the first shaft member thus requiring a clearance to provide for a sliding fit (col. 4, lines 14-21). Therefore, as taught by Dent, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the cylindrical member apart from the first shaft member by a clearance except at the caulked portion to provide for the shaft member to slidably fit over the first shaft member which allows for ease of insertion commonly in sliding fits.

Regarding claim 11, the first shaft member **3** comprises an input shaft or an output shaft. The second shaft member **2** comprises the output shaft. The input shaft and the output shaft are arranged relatively rotatably with respect to each other. Regarding the intended use recitation, it is the patentability of the product and not how it is intended to be used that is to be determined. No structure is imparted to the shafts by this recitation of intended use. Nevertheless, the input shaft and the output shaft can be used for a torque sensor of an electric power steering apparatus.

Regarding claim 21, Chikaraishi discloses, in Figure 2, a structure comprising a first shaft member **3**, a second shaft member **2**, a surrounded member **2A**, a cylindrical member **10**, and a torque detection coil **20B**. The first shaft member **3** is formed out of a first material. The first shaft member **3** has an outer periphery formed with at least one of an axial groove **11** and a circumferential groove **12**. The axial groove **11** has a cross-section having opposed faces substantially parallel to each other. The second shaft member **2** is fixed to the first shaft member **3** via a torsion bar **4**. The surrounded member **2A** is formed out of a magnetic material (similar to that of the shaft) and fixed to the second shaft member **3**. The cylindrical member **10** is provided to the outer periphery of the first shaft member **3**. The cylindrical member **10** has a portion facing the surrounded member **2A**. The cylindrical member **10** is formed out of a second material (aluminum) greater in linear expansion coefficient than the first material (iron). The second material is a conductive non-magnetic metallic material (aluminum is non-magnetic). A caulked portion **13** is provided to the cylindrical member **10** at a position corresponding to the axial groove **11** of the first shaft member **3**. The caulked portion **13** has a deformed inner surface in press contact with the opposed faces of the circumferential groove **12**. The cylindrical member **10** is spaced apart from the first shaft member **3**.

However, Chikaraishi fails to disclose the cylindrical member **10** being apart from the first shaft member by a clearance extending axially from one axial end of the cylindrical member through a portion except the caulked portion **13** to another axial end

of the cylindrical member. Applicants are reminded that using the technique of Dent allows for a clearance to be present since one needs to slidably fit the cylindrical member to the first shaft member thus requiring a clearance to provide for a slidable fit (see Dent; col. 4, lines 14-21). Therefore, as taught by Dent, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the cylindrical member apart from the first shaft member by a clearance extending axially from one axial end of the cylindrical member through a portion except at the caulked portion to another axial end of the cylindrical member to provide for the shaft member to slide fit over the first shaft member which allows for ease of sliding during manufacturing.

Regarding claim 23, given the modification the clearance would have been sufficient to loosely fit an inner periphery side of the cylinder member **10** over the outer surface of the first shaft member **3**.

Regarding claim 24, the clearance is established at ordinary temperature.

Regarding claim 25, the caulked portion **13** is provided to the cylindrical member **10** at the intersection of the axial groove **11**, the circumferential groove **12**, and part of the circumferential groove adjacent to the intersection.

Regarding claim 26, the first shaft member **3** has the outer periphery formed with axial grooves **11**. The caulked portion is provided at each of the axial grooves **11**. Further, given the modification, the clearance would have existed between the cylindrical member **10** and the first shaft member **3** in between the caulked portions.

Regarding claim 27, given the modification, the first shaft member would have had the outer periphery formed with another axial groove. The first shaft member would have had a plurality of intersections of the circumferential groove and the axial grooves, and the cylindrical member would have had a plurality of caulked portions along the circumferential groove. Each of the caulked portions would have been formed about the corresponding intersection of the plurality of intersections.

Regarding claim 28, given the modification the first shaft member would have had the outer periphery formed with another axial groove. The first shaft member would have had a plurality of intersections of the circumferential groove and the axial grooves. The cylindrical member would have been partly spaced apart from the shaft member by a clearance existing circumferentially between the intersections (note that since the caulked portions are at the intersection and not throughout the entire circumference, a clearance would be present between each intersection along the circumference; this depends where in the caulked portions the two points are taken).

Regarding claim 29, the first shaft member **3** has the outer periphery further formed with a circumferential groove **12**. The axial groove **11** and the circumferential groove **12** each having a cross section having opposed faces substantially parallel to each other. However, Chikaraishi fails to disclose the axial groove **2e** being greater in depth than the circumferential groove **2d** and the caulked portion **10** having a caulked protrusion portion extending beyond a depth of the circumferential groove and engaged with the axial groove. Dent teaches, in Figure 3, an axial groove **64** being greater in depth than a circumferential groove **36** and a caulked portion at an intersection having a caulked protrusion portion extending beyond a depth of the circumferential groove and engaged exclusively with the axial groove (See Dent; col. 4, lines 35-38). Dent does not explicitly explain the reason for making the axial groove greater in depth than that of the circumferential groove; however, it appears that placing the axial groove or the circumferential groove greater in depth than that of the other allows swaging of the material to penetrate deeper into the groove to hold with a greater compression force as compared to the depths being the same. Therefore, as taught by Dent, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the axial groove be greater in depth than the circumferential groove to swage the caulked portion deeper into the axial groove to provide a greater compression force to connect the first shaft member to the cylindrical member.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chikaraishi, JP11-248562, in view of Dent, 3,652,111, as applied to claims 1, 6, 7, 9, 11, 21, 23, and 24, and further in view of Fujioka et al., 4,716,756.

Regarding claim 8, Dent, as discussed, fails to disclose the axial groove **64** and the circumferential groove **36** being rectangular. Applicants are reminded that a change in the shape of a prior art device is a design consideration within the skill of the art. In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966). Fujioka et al. equally teach a groove being rectangular to make a connection. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to design the groove be rectangular in cross section as taught by Fujioka et al., Fig. 8, since such groove will perform equally well to make a connection.

Claims 10 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chikaraishi, JP11-248562, in view of Dent, 3,652,111, as applied to claims 1, 6, 7, 9, 11, 21, 23, 24, and 26, and further in view of Edgemon, Jr., 3,642,311.

Regarding claim 10, Dent fails to disclose the axial groove **64** having an opening edge formed at an acute angle. Edgemon, Jr. teaches, in Figure 2, an axial groove **18** having an opening edge formed at an acute angle. Edgemon, Jr. does not state why the opening edge is formed at an acute angle. Applicant is reminded that side faces of a rectangular axial groove formed on a cylindrical surface inherently form an opening

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edge at an acute angle as part of an inherent feature when using rectangular grooves. Therefore, as taught by Edgemon, Jr., it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the axial groove of Dent with an opening edge formed at an acute angle as part of forming an axial groove being rectangular on a cylindrical surface instead of using semicircular grooves since a rectangular groove requires less machining than a semicircular groove.

Regarding claim 22, given the modification the opening edge will be inherently formed at an acute angle at the intersection since all the grooves will be modified to rectangular grooves.

Response to Arguments

Applicants' arguments filed June 27, 2008 have been fully considered but they are not persuasive. In particular, note the 35 USC 112, 1st paragraph rejections.

Applicants argue that the projections 13 are preformed on Chikaraishi cylinder member 10 before the cylinder member 10 is even mounted onto Chikaraishi's member 3 and thus there is no caulking of the projections 13 while mounted to the axial grooves 11. In response, it should be noted that patentability is based on the structural

differences and not on the method of making the projections by caulking while the cylinder member is mounted onto the other member. See MPEP 2113.

Applicants further argue that Chikaraishi fails to disclose that caulking causes any caulking portion to extend beyond the circumferential groove and into the axial groove. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Accordingly, when Chikaraishi is combined with Dent, the projection will extend beyond the circumferential groove.

Applicants further argue that Dent fails to disclose the axial groove 64 being greater in depth than a circumferential groove 36. In response, applicants should note that col. 4, lines 35-38, suggests "and the greatest depth is in section 3". Obviously, he does not set forth literally that "the groove 64 is deeper in depth than the groove 36"; However, the drawings, in particular Figure 4, suggest that the axial grooves are deeper than the circumferential groove since the axial groove does not just terminate at the bottom of the axial groove. The examiner suggests drawing a line between the bottom of the circumferential grooves and seeing that the axial groove does not just terminate at the same drawn line but rather extends beyond.

Applicants further argue that Dent is in a differing art than that of Chikaraishi. In response, the argument has been acknowledged and the record should be clear that the claimed invention is not directed towards "a power steering structure" but rather "a structure" which could be anything under the sun. Further, Dent is relevant art since it solves the same problem, i.e., providing an axial groove deeper than the circumferential groove for a greater connection. Accordingly, Dent is analogous since the reference is within the field of applicant's endeavor, i.e., connecting two components. Note that one skilled in the art would have resorted to many ways of connecting two components and Dent happens to provide for one way where the axial groove is deeper than the circumferential groove. The examiner is merely substituting or enhancing the connection used in Chikaraishi.

With respect to the arguments made by the applicants' foreign representative, the examiner has acknowledged the remarks; however, they are not persuasive since the combined teachings suggest the claimed invention. Applicants argue that Chikaraishi disclose the technique for caulking all peripheral surface (entire circumference) of the cylindrical member. In response, this argument is not correct since the projections are only at the intersection and in intervals of the peripheral surface. This would be correct with respect to Dent; however, the examiner is not relying on that portion of Dent but solely on the teaching that an axial groove is deeper than the circumferential groove.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. In particular, the new limitation "the caulked portion at the intersection having a caulked protrusion portion extending beyond a depth of said circumferential groove, and engaged exclusively with the deeper said axial groove" in claim 1, lines 23-25, necessitated the new grounds of rejection. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ernesto Garcia whose telephone number is 571-272-7083. The examiner can normally be reached from 9:30AM-6:00PM. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel P. Stodola can be reached at 571-272-7087.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/E. G./

Examiner, Art Unit 3679

October 4, 2008

Attachment: one marked-up page of Applicant Figure 11

/Daniel P. Stodola/
Supervisory Patent Examiner, Art Unit 3679

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Applicant's Figure 11

